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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,129	06/13/2002	Anant Achyut Setlur	RD-28679	3223

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GENERAL ELECTRIC COMPANY
GLOBAL RESEARCH
PATENT DOCKET RM. BLDG. K1-4A59
NISKAYUNA, NY 12309

EXAMINER

HODGES, MATTHEW P

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/064,129

Applicant(s)

SETLUR ET AL.

Examiner

Matt P. Hodges

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) See Continuation Sheet is/are allowed.
- 6) ☒ Claim(s) 1-6, 17, 23, 32, 35, 40, 43, 48, 51, 56, 58, 62 and 64 is/are rejected.
- 7) ☒ Claim(s) 7, 8, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 52 is objected to because of the following informalities:

Claim 52, line 11, the series for each phosphor is led by a number except for the last group which appears to inadvertently be led by the letter "d". It is assumed for the purposes of examination that the number "4" was intended.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 17, 23, 32, 35, 40, 43, 48, 51, 56, 58, 62, and 64 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuda et al. (US 5,808,409).

Regarding claims 1-3, 23, 32, 35, 48, and 51, Matsuda discloses a lamp including a tube filled with mercury vapor. The tube is coated with a phosphor blend including among other phosphors $\text{LaPO}_4\text{:Ce}$, Tb and $\text{Gd}_2\text{O}_3\text{:Eu}$. (Column 12 line 47 – Column 13 line 10). It is noted that the mercury discharge tube of this type emits UV radiation primarily at around 254nm. The phosphor blend is likewise sensitive to this wavelength.

Regarding claims 17, 40, and 43, Matsuda additionally discloses the use of MgWO_4 as a phosphor in the fluorescent lamp. (Column 9 lines 10-28).

Art Unit: 2879

Regarding claim 4, the emitted light is a combination of red, green and blue phosphors which equates to white light.

Regarding claims 5 and 6, Matsuda does not explicitly state the color coordinates of the white light however color coordinates of a phosphor blend are an inherent property of the blend itself. In this case the color coordinates are substantially close to the reference color of a black body locus.

Regarding claims 56 and 58, Matsuda does not explicitly state the CRI range of the end phosphor blend however the CRI is an inherent property of the blend itself. In this case the phosphor blend would ideally have a CRI of greater than 80.

Regarding claims 62 and 64, Matsuda does not explicitly state the CCT range of the end phosphor blend however the CCT is an inherent property of the blend itself. In this case the CCT would be less than 6500K and greater than 2700K.

Allowable Subject Matter

Claims 9-16, 20-22, 24-31, 33, 34, 36-39, 41, 42, 44-47, 49, 50, 52-55, 57, 59-61, 63, 65- and 67 are allowed.

Claims 7, 8, 18, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 7, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 7, and specifically comprising the limitation

Art Unit: 2879

of a phosphor blend including $(\text{Tb, Y, Lu, La, Gd})_x (\text{Al, Ga})_y \text{O}_{12}:\text{Ce}^{3+}$ along with another phosphor where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm and where y is in a range from about 4.5 to and including 5.

Regarding claim 8, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 8, and specifically comprising the limitation of a phosphor blend including $(\text{Tb, Y, Lu, La, Gd})_x (\text{Al, Ga})_y \text{O}_{12}:\text{Ce}^{3+}$ along with another phosphor where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm and where y is in a range from about 4.6 to and including 5.

Regarding claims 9, 10, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claims 10 and 11, and specifically comprising the limitation of a phosphor blend including $(\text{Tb, Y, Lu, La, Gd})_x (\text{Al, Ga})_y \text{O}_{12}:\text{Ce}^{3+}$ along with another phosphor where the phosphor blend absorbs EM radiation in a range from about 250nm to 350nm.

Regarding claims 11-13, claims 11-13 are allowable for the reasons given in claim 10 because of their dependency status from claim 10.

Regarding claims 14-16, claims 14-16 are allowable for the reasons given in claim 9 because of their dependency status from claim 9.

Regarding claim 18, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 18, and specifically comprising the limitation of a phosphor blend including $(\text{Tb, Y, Lu, La, Gd})_x (\text{Al, Ga})_y \text{O}_{12}:\text{Ce}^{3+}$ along with another phosphor where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm and where y is in a range from about 4.5 to and including 5.

Art Unit: 2879

Regarding claim 19, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 19, and specifically comprising the limitation of a phosphor blend including $(\text{Tb, Y, Lu, La, Gd})_x (\text{Al, Ga})_y \text{O}_{12}:\text{Ce}^{3+}$ along with another phosphor where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm and where y is in a range from about 4.6 to and including 5.

Regarding claim 20, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 20, and specifically comprising the limitation of a phosphor blend of the stated phosphors where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm. See applicant's response filed 12/14/2004 for further explanation.

Regarding claims 21 and 22, claims 21 and 22 are allowable for the reasons given in claim 20 because of their dependency status from claim 20.

Regarding claim 24, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 24, and specifically comprising the limitation of a phosphor blend including $(\text{Tb, Y, Lu, La, Gd})_x (\text{Al, Ga})_y \text{O}_{12}:\text{Ce}^{3+}$ along with another phosphor where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm and where y is in a range from about 4.5 to and including 5.

Regarding claim 25, claim 25 is allowable for the same reasons given in claim 24 because of its dependency status from claim 24.

Regarding claim 26, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 26, and specifically comprising the limitation of a phosphor blend of the stated phosphors where the phosphor blend absorbs EM radiation in a

Art Unit: 2879

range from about 200nm to 4000nm. See applicant's response filed 12/14/2004 for further explanation.

Regarding claim 27, claim 27 is allowable for the same reasons given in claim 24.

Regarding claim 28, claim 28 is allowable for the same reasons given in claim 27 because of its dependency status from claim 27.

Regarding claim 29, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 29, and specifically comprising the limitation of a phosphor blend of the stated phosphors where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm. See applicant's response filed 12/14/2004 for further explanation.

Regarding claim 30, claim 30 is allowable for the same reasons given in claim 24.

Regarding claim 31, claim 31 is allowable for the same reasons given in claim 30 because of its dependency status from claim 30.

Regarding claim 33, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 33, and specifically comprising the limitation of a light source including a source of gas discharge and a phosphor blend including (Tb, Y, Lu, La, Gd)_x (Al, Ga)_y O₁₂:Ce³⁺ along with another phosphor where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm and where y is in a range from about 4.5 to and including 5.

Regarding claim 34, claim 24 is allowable for the same reasons given in claim 33 because of its dependency status from claim 33.

Art Unit: 2879

Regarding claims 41, 49, and 53, claims 41, 49, and 53 are allowable for the same reasons given in claim 33.

Regarding claims 42, 50, and 54, claims 42, 50, and 54 are allowable because of their dependency on allowed claims 41, 49, and 53.

Regarding claim 52, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 52, and specifically comprising the limitation of a phosphor blend of the stated phosphors where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm. See applicant's response filed 12/14/2004 for further explanation.

Regarding claims 55, 61, and 67, claims 55, 61, and 67 are allowable for the reasons given in claim 52 because of their dependency status from claim 52.

Regarding claims 60 and 66, claims 60 and 66 are allowable for the reasons given in claim 49 because of their dependency status from claim 49.

Regarding claim 36, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 36, and specifically comprising the limitation of a light source including a source of gas discharge and a phosphor blend including (Tb, Y, Lu, La, Gd)_x (Al, Ga)_y O₁₂:Ce³⁺ along with another phosphor where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm.

Regarding claims 37-39, 57, and 63, claims 37-39, 57, and 63 are allowable for the reasons given in claim 36 because of their dependency status from claim 36.

Regarding claim 44, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 44, and specifically comprising the limitation

Art Unit: 2879

of a light source including a source of gas discharge and a phosphor blend including 2 of the phosphors from the list provided where the phosphor blend absorbs EM radiation in a range from about 200nm to 4000nm.

Regarding claims 45-47, 59, and 65, claims 45-47, 59, and 65 are allowable for the reasons given in claim 44 because of their dependency status from claim 44.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 2879

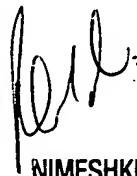
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mph



NIMESHKUMAR D. PATEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Continuation of Disposition of Claims: Claims allowed are 9-16, 20-22, 24-31, 33, 34, 36-39, 41, 42, 44-47, 49, 50, 52-55, 57, 59-61, 63, 65-and 67.